UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

YOUNG FOLKS' PROGRAM — Friday, Feb. 10.

(NOT FOR PUBLICATION)

ANNOUNCEMENT: There is Uncle Abe of the Department of Agriculture again; -the man sitting there reading the paper. That boy is his nephew Jim. Jim is as full of questions as his Uncle Abe is of stories -----Didn't I tell you ----- There he starts now -------

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JIM: What's paper made of, Uncle Abe?

UNCLE ABE: Paper is made from cotton and linen rags, wood, straw, esparto grass, and a number of other plant fibers. Fact is, it's possible to make paper from practically all kinds of plants.

JIM: How can they make paper out of plants?

UNCLE ABE: Why, the paper is made mostly of cells which form the framework of the growing tissue of plants. To make paper, those cells must be separated from their binding or covering, then formed into a mat, and finally pressed or rolled into a sheet. The sheet of paper is really a fine map of little interlacing fibers. The strength, and the color, and the thickness of the paper depends on how it was made and of what it was made.

JIM: And you say, paper can be made out of any kind of plants?

UNCLE ABE: It can be. Of course, that doesn't mean it would pay to do it. The first paper was made from rags. Even now, at least part of the finest book and writing paper is made of rags.

JIM: What is that newspaper made of?

UNCLE ABE: I'm coming to that. You see, when people got to using more and more paper, there werenot enough rags from which to make it. So they tried out other things instead of rags. On account of wood being cheap and plentiful, and suitable for all but the finest grades of paper, wood became the chief source of supply for paper making.

Now, paper like this in this newspaper, and in cheap magazines, and in cheap catalogs is made mostly of ground wood.

JIM: How do they grind it?

UNCLE ABE: Well, they just saw and split the logs into pieces about two feet long; so they can be easily handled. Then those pieces of wood are ground to a pulp by a grindstone. The stone revolves in an iron casing provided with pockets for holding the wood. A piston in each pocket serves to hold the wood against the stone at the necessary pressure. The groundwood is washed from the revolving stone and carried by water through various washing and

screening processes. Finally, the wood pulp is collected on a wire mesh cylinder which revolves in a tank into which the water and clean fiber rubs. That is the cheapest way to make wood pulp, but the quality of the pulp is so poor that even in cheap papers, they have to use considerable quantities of longer and stronger fibered pulp.

JIM: Do they use any kind of woods?

UNCLE ABE: No, Jim. Very few woods are suitable for making wood pulp for paper that way. The spruces and balsam are used mostly.

JIM: Why can't they use other woods?

UNCLE ABE: Well, very hard woods take too much power to grind them. Dark colored woods are not so good, because the color of the wood affects the color of the paper. Pitch, knots, and decay all cause considerable discoloration and lower the quality of the pulp.

JIM: How do they make the stronger paper.

UNCLE ABE: The stronger and better grades of paper are made of pulps manufactured by one of the three chemical processes.

JIM: What are they like?

UNCLE ABE: Well, first the wood is cut into chips. Then the chips are cooked in a "digester" with a chemical under steam pressure. When the cooked wood is taken out of the digester, the fibers are thoroughly separated, washed, and screened. The clean fibers mixed with water are then ready to be run over a fine wire mesh through which the water drains, leaving a mat of wood pulp.

Some classes of book paper, wrapping paper, bond paper, and tissue papers are made largely by what is known as the sulphite process, because the pulp is made by the use of the chemical bi-sulphite, which is formed by treating lime with sulphur dioxide gas. The sulphite process is a little more expensive than the other processes. It yields only about half as much wood pulp as the groundwood process does. The pulp, however, is very strong and can be bleached very white.

JIM: What trees do they use for that kind of pulp?

UNCLE ABE: Oh, softwoods, such as spruce, balsam, and hemlock. Kraft or wrapping paper and high test fiber board are made from what is known as sulphate pulp. The sulphate process is a little less expensive than the sulphite process. Any long-fibered wood may be used for sulphate pulp.

JIM: How about the paper in this envelope? Which way was it made?

UNCLE ABE: That's probably made from a mixture of sulphite pulp and pulp made by a third chemical process known as the soda process. Book paper, lithograph paper, and envelope papers are often made that way. The mixture gives a pulp which makes a well-felted, well-formed sheet of paper suitable for printing

The soda process can be used on coniferous or evergreen woods without trouble, but it is used almost entirely in making pulp from soft, short-fibered leaf-shedding trees such as aspen, cottonwood, basswood, beech, birch, and gum. Soda pulp is sometimes used by itself in making some of the cheaper, bulkier, book papers which don't need to be strong. Caustic soda is the chemical used.

JIM: Where is most of the wood pulp made?

UNCLE ABE: Well, the center of the pulp and paper industry in this country right now is in the Northeast. That's where the business was first started. From there it spread mostly in the direction of the Canadian spruce forests. Over half of our pulp and paper materials now come from Canada.

JIM: Is there any danger of running out of wood for pulp?

UNCLE ABE: Yes, sir-ee. Keeping up and increasing the supply of pulpwood for paper is one of our big business problems today. And it is one in which many of us can help.

JIM: How you mean?

UNCLE ABE: Like all other forest problems, it can be helped by using the forests wisely. We must protect the forests from fire, and from insects, and from tree diseases. We should grow trees and grow enough of them so that they will more than take the place of those now being used to make papers for our books, magazines, and newspapers.

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UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

YOUNG FOLKS' PROGRAM Friday, Feb. 17.

(NOT FOR PUBLICATION)

SUBJECT: George Washington, the great farmer.

ANNOUNCEMENT: There's Jim and his Uncle Abe, from the Department of Agriculture. Jim has been looking forward to celebrating George Washington's birthday next week. See, he has Uncle Abe there showing him pictures of George Washington now --- Listen ----

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JIM: There are sure a lot of pictures of Washington on horseback -- he must have been a good rider ---

UNCLE ABE: He certainly was, Jim. George Washington could sit a horse with the best of them. He could jump them over fences ---- Fact is, George was a real horseman. Did you ever hear that story about him ----

JIM: You mean the about breaking the colt, when he was a boy?

UNCLE ABE: Yes, that's the one. But he didn't stop when he got older, George Washington used to break all the horses on his farm; and he had quite a number of them, too. At one time, he had 130 horses wearing the "G. W." brand, to say nothing of cattle and other livestock.

JIM: He must have owned a good sized farm.

UNCLE ABE: Well, toward the latter part of his life he had about 3,200 acres under cultivation. Yes, Jim, George Washington was a great general farmer as well as a great general. He raised deer, turkeys, hogs, cattle, and geese, but he paid especial attention to sheep, horses, and mules. He seemed to like them best.

Fact is, General Washington was the first farmer to try raising mules in this country. Soon after the Revolution, he got a couple of jacks from Spain and started mule breeding. He sent one of his jacks on a tour to Charleston, South Carolina, and back. Most of the people never had seen one before. But Washington was quite an enthusiast on the subject of mules. He started to breed heavy work mules and lighter mules for driving to carriages. He said that in a few years, he expected to use only mules to his own carriage.--- Some farmers nowadays might take a tip from Washington, and start breeding more horses and mules. If they don't, we are likely to have a shortage of animals on our farms in a few years -----

JIM: What else did George Washington raise, Uncle Abe?

UNCLE ABE: As I said, Washington was a great general farmer. One of his

chief reasons for keeping so much livestock was to improve the soil. Washington's land was poor land. He was always trying to impress upon his overseers the value of fertilizers. They didn't have artificial fertilizers, as we do. But Washington preached manure early and late. He also had a plan for digging the rich mud from the bottom of the Potomac River and putting it on his land, but he never could find the machinery to do it without too big a cost.

Washington was also one of the earliest farmers in this country to practice scientific rotation of crops. You see, the man who was first in war, first in peace, and first in the hearts of his countrymen was a progressive farmer. In his day, there were no fine State Agricultural Experiment Stations scattered throughout the country as we have today. But George Washington was always experimenting and had a little farm or garden where he carried on his own investigations. For instance, he ran a lot of experiments on wheat and tobacco. He tried planting potatoes with and without manure and carefully noted the differences in the yields. He was continually trying out new plants and new ways. A lot of his experiments were failures. Some probably cost him a good bit. Some of the experiments were successful. He urged that the biggest and best potatoes be used for seed, at a time when his neighbors still insisted on using the littlest and scrubbiest for seed. Even today, there are some farmers who do not realize, as George Washington did, that to raise good crops you must first of all have good seed.

JIM: Did Washington make much money as a farmer?

UNCLE ABE: Well, you must remember, Jim, General Washington's land was poor and his farm hands were probably a pretty careless, shiftless lot who didn't know anything about many of the things Washington tried to raise. Remember, too, Washington was away from home fighting his country's battles and later serving as our first president. But when he was home, he probably made as much or more profit than most of the farmers in his section at that time.

But when he was away from home, he made his manager send him weekly reports showing the weather conditions for each day, the work done on each of the several farms or units of his farm, and what each person did, who was sick, and any losses and increases in stock.

JIM: That must have been some report!

UNCLE ABE: Washington was great for keeping records. He realized what every farmer these days should realize, that in order to manage a farm business properly, the farmer must keep records and accounts, so he can tell exactly where he stands, what branch of his farming is paying and what is not. Washington didn't have the advantage of having a Department of Agriculture to tell him just how such records can best be kept, as we have. But he was a close figurer. One experiment noted in his records was the killing of a wether sheep, careful weighing of the amounts of meat, tallow, wool, and skin and estimating their value at the market price in order to find out whether it paid better to butcher animals or to sell them on the hoof.

George Washington liked farming better than anything else. He was continually planning, calculating, and experimenting. He kept in touch with the leading farm experts of his day. In order to answer some questions about farm conditions Washington once sent out a circular letter to some of the more intelligent farmers in the Middle States and the replies he got are said to form probably the best source of information about agricultural conditions of that time.

Today thousands of intelligent farmers scattered throughout the country make regular reports on crop and other farm conditions to the Federal Department of Agriculture at Washington. More complete information than Washington could get for the use of maybe a few big farmers after much work can now be received by any farmer in the United States through the Department reports published in the newspapers and broadcast by radio.

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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

YOUNG FOLK'S PROGRAM — Fri. Feb. 24, 1928.

(NOT FOR PUBLICATION)

SUBJECT: Canaries

ANNOUNCEMENT: Well, if there isn't Jim! --Somebody seems to have given him a canary bird -- Uncle Abe of the Department of Agriculture will be glad to see that. He has often tried to interest Jim in birds and animals ------- But where is Uncle Abe, anyway? ------ Ah! I hear him coming now---

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JIM: Hell, Uncle Abe! Look here! ----

UNCLE ABE: Well, well, if it isn't a canary! Did your Daddy get you that?

JIM: What do you think of it, Uncle Abe?

UNCLE ABE: Sounds to me as if he had been well educated.

JIM: How you mean "educated"?

UNCLE ABE: Why, Jim, don't you know that they send canary birds to music school, to teach them how to sing?

JIM: Really and truly? Or are you just funning?

UNCLE ABE: Really and truly.

JIM: Who teaches the canary birds.

UNCLE ABE: Why, the people who raise song canaries run the school, of course. But some of the professors are older male canary birds, noted for their soft song.

JIM: How do they teach the others?

UNCLE ABE: Well, when the young canary birds are fledged, they are put in rooms with those good singers I was just tellin you about. The young ones develop their own vocal powers trying to imitate the master singers. They are watched carefully, however. Any bird that develops harsh notes is taken out of the class at once; so he won't be a bad example for his brothers. During the molting season, when the full-grown birds don't sing, a mechanical instrument known as a bird organ is used to furnish the music. Ordinarily, the room where song canaries are being trained is darkened. Often the cages of

the young birds are screened with cloth ----

JIM: What's that for, Uncle Abe?

UNCLE ABE: That is to teach the young canary birds not to sing too loud. Well, in six months or less, canaries are ready to graduate. They are ready to be sold as songsters or to be used as teachers for training still younger birds. Often the canaries are taught some simple strain or air through constantly repeating it by whistling or by means of an instrument. Yes, Jim, well-trained canaries are popular pets and they often bring high prices.

JIM: Did canary birds come from the Canary Islands?

UNCLE ABE: It is supposed that the original supply of canaries came from the Canary Islands. But it seems doubtful that those were the ancestors of all our canaries. Wild canaries from the Canary Islands may have been crossed with their close relatives the serin finches of southern and central Europe. But the original canaries were different in color from their modern descendants. The wild birds are grayer and darker.

JIM: How did they change their color?

UNCLE ABE: Well, Jim, you could change the color of that canary of yours to some extent. That is, you could make its color deeper and richer.

JIM: How?

UNCLE ABE: By feeding for color, as soon as the canary is ready to molt. Just substitute pieces of common sweet red peppers sold in fresh-vegetable markets for the bits of lettuce you ordinarily give as green food. That will make the canary noticeably deeper and richer in color. But if you do that, keep it in a dim light away from the windows, as the artificial color fades easily at first.

JIM: Tell me, Uncle Abe, what I should feed this canary; for its regular food.

UNCLE ABE: Well, canary seed with a little rape seed and a little hemp seed added to it should be the main part of the feed. Besides the seed supply you should often put a little lettuce or a bit of apple between the wires of the cage. Bread moistened in scalded milk, given cold every once in awhile is good for canaries. Don't make it too wet; just enough to soften the bread without making it pasty or runny. Moist food must be kept strictly fresh and clean or it may make the bird sick.

JIM: What else would you feed?

UNCLE ABE: I'll tell you, Jim, if you want to know more about canaries, why don't you just write to the United States Department of Agriculture for Farmers' Bulletin No. 1-3-2-7 on "Canaries, Their Care and Management"? And, by the way, that's a swell cage you have there. If I were you, I'd

take out that swing perch suspended in the center of the cage. Then your canary would have more room. With that out of the way, he won't be always hitting his head or wings against it. Those perches are the equipment of the canary's gymnasium. Shut up in a cage that way, he gets all his exercise jumping from perch to perch. Taking out that center swing perch will give him more room to hop to and from those other perches.

JIM: Where is the best place to hang the cage?

UNCLE ABE: I'm glad you asked me that. That's important. Although canaries, when they get used to it, can stand pretty cold weather without harm, sudden changes in temperature and cold drafts may kill them quick. Never expose a canary bird to a strong draft of cold air. Keep that in mind in choosing a place for that cage.

JIM: How about hanging the cage in front of the window here -- so he can get plenty of light and sunshine.

UNCLE ABE: That's all right, if there are no drafts there. The room where you hang the cage should be kept at about the same temperature day and night. In cold wether it is well to cover the cage with a towel or a light cloth.

JIM: How about hanging the cage above the radiator here?

UNCLE ABE: No! Never hang the cage directly above a radiator, the changes may be more sudden there than anywhere else. Exposing the canary to damp air may kill it. -----But wherever you put the cage, you must keep it clean, if you expect the bird to remain in good health and free from vermin. Change the water every day. Replenish the seed cup every other day. And remember, Jim, under normal conditions most birds probably take a bath every day. So provide a dish of tepid water, so your canary can get a bath, and put it in the cage every day. But don't let him have a bath when the room is colder than usual. During the molt, you should give the bath not more than twice a week. If he is molting on color feed, once a week is enough.

JIM: Suppose this canary does get sick? What should I do?

UNCLE ABE: Well, Jim, with ordinary care in cleanliness, and with freedom from cold damp drafts, and a well-regulated food supply, canaries don't have many troubles. Most of their troubles can be traced to the way they are handled. If your canary gets sick the first thing to do is to see that its feed is all right and that the general cleanliness and sanitation is what it should be. It is always well to move a sick bird to a warm place. Heat and protection from drafts works wonders. Often it is enough by itself to get them back to health. But you will find a lot more about caring for canaries in the Farmers' Bulletin No. 1-3-2-7.

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